

REMARKS

In response to the Office Action mailed October 28, 2004, Applicant respectfully requests reconsideration.

By this amendment, Applicant amends claims 1, 3-7 and 10. As a result, claims 1 and 3-12 are pending for examination, of which claims 1, 3, 5, 7 and 10 are independent. No new matter has been added.

1. Telephone Interview

Applicant and Applicant's representatives appreciate the courtesies extended by Examiner Loke in granting and conducting a telephone interview on January 27, 2005 with Applicant's representative, Daniel P. McLoughlin. During the telephone interview, European Patent Application 0 213 983 (Miller) and claim 1 were discussed. Examiner Loke expressed his position that the "first region" of claim 1 reads on gap region 26 in Fig. 2 of Miller, and that the "conduction channel" of claim 1 reads on the combination of halo region 29 and channel region 16 of Fig. 2 of Miller. Applicant respectfully disagreed, but, in order to avoid further delay in the prosecution of this application, agreed to consider amendments to place claim 1 and the remaining claims in condition for allowance.

Examiner Loke agreed that the current rejections based on Miller would be overcome, and all of the claims would distinguish over the art of record, if the independent claims were amended to make clear that a non-contradoped region of the source of a programmed cell/transistor has a lower doping concentration than the drain of the cell/transistor.

Accordingly, as shown above and discussed in more detail below, Applicant has amended each of the independent claims to capture this distinguishing feature.

2. Claim 1 Patentably Distinguishes Over Miller

Claim 1 stands rejected under 35 U.S.C. Section 102(b) as purportedly being anticipated by Miller. Applicant respectfully traverses this rejection.

Claim 1 has been amended as shown above to further clarify the patentable distinctions of claim 1 over Miller. Support for this amendment can be found in the specification, on page 4, lines 15-24. No new matter has been added.

Claim 1 is directed to a method for programming a read-only memory cell including a transistor having a drain and a source, the method comprising, *inter alia*, contradoping a first region of the source, **wherein a second region of the source has a lower doping concentration than the drain of the transistor**. As conceded by the Examiner during the telephone interview, Miller does not teach or suggest that a second region of the source of a transistor has a lower doping concentration than the drain. Rather, Miller indicates that the source 18 and drain 20 of transistor 32 are both heavily-doped, n-type regions (Figs. 2; col. 3, lines 38-41).

In view of the foregoing, claim 1 patentably distinguishes over Miller. Accordingly, Applicant respectfully requests that the rejection of claim 1 under Section 102(b) be withdrawn.

3. Claims 3, 4 and 12 Patentably Distinguish Over Miller

Claim 3 stands rejected under 35 U.S.C. Section 102(b) as purportedly being anticipated by Miller. Applicant respectfully traverses this rejection.

Claim 3 has been amended as shown above to further clarify the patentable distinctions of claim 3 over Miller. Support for this amendment can be found in the specification, on page 4, lines 15-24.

Claim 3 is directed to a memory, in integrated circuit form, comprising, *inter alia*, a first transistor forming a corresponding programmed cell, wherein a first region of the source is contradoped, and **wherein a second region of the source has a lower doping concentration than the drain of the transistor**. As should be clear from the discussion of Miller in Section 2 above, Miller does not teach or suggest that a second region of the source has a lower doping concentration than the drain of the transistor.

In view of the foregoing, claim 3 and its dependent claims 4 and 12 patentably distinguish over Miller. Accordingly, Applicant respectfully requests that the rejections of these claims under Section 102(b) be withdrawn.

4. Claims 5 and 6 Patentably Distinguish Over Miller

Claim 5 stands rejected under 35 U.S.C. Section 102(b) as purportedly being anticipated by Miller. Applicant respectfully traverses this rejection.

Claim 5 has been amended as shown above to further clarify the patentable distinctions of claim 5 over Miller. Support for this amendment can be found in the specification, on page 4, lines 15-24.

Claim 5 is directed to a memory, comprising, *inter alia*, a first programmed cell having a drain of a second doping type and a source, wherein the source includes a first region of the first doping type and a **second region having a lower doping concentration than the drain**, wherein the first region is the only region of the source that is contradoped. As should be clear from the discussion of Miller in Section 2 above, Miller does not teach or suggest a source including a second region having a lower doping concentration than the drain.

In view of the foregoing, claim 5 and its dependent claim 6 patentably distinguish over Miller. Accordingly, Applicant respectfully requests that the rejections of these claims under Section 102(b) be withdrawn.

5. Claims 7-9 Patentably Distinguish Over Miller

Claim 7 stands rejected under 35 U.S.C. Section 102(b) as purportedly being anticipated by Miller. Applicant respectfully traverses this rejection.

Claim 7 has been amended as shown above to further clarify the patentable distinctions of claim 7 over Miller. Support for this amendment can be found in the specification, on page 4, lines 15-24.

Claim 7 is directed to a memory, comprising, *inter alia*, a first programmed cell having a drain and a source including non-conducting means being contradoped, **wherein a region of the source not including the non-conducting means has a lower doping concentration than the drain**; and wherein the non-conducting means is the only region of the source that is contradoped. As should be clear from the discussion of Miller in Section 2 above, Miller does not teach or suggest that a region of the source not including the non-conducting means has a lower doping concentration than the drain.

In view of the foregoing, claim 7 and its dependent claims 8 and 9 patentably distinguish over Miller. Accordingly, Applicant respectfully requests that the rejections of these claims under Section 102(b) be withdrawn.

6. **Claims 10 and 11 Patentably Distinguish Over Miller**

Claim 10 stands rejected under 35 U.S.C. Section 102(b) as purportedly being anticipated by Miller. Applicant respectfully traverses this rejection.

Claim 10 has been amended as shown above to further clarify the patentable distinctions of claim 10 over Miller. Support for this amendment can be found in the specification, on page 4, lines 15-24.

Claim 10 is directed to a method for programming a cell, comprising, *inter alia*, forming, in a substrate of a first doping type, a first transistor having a drain of a second doping type, and a source of the second doping type **at least a portion of which has a lower doping concentration than the drain**, and contradoping only a first region of the source. As should be clear from the discussion of Miller in Section 2 above, Miller does not teach or suggest forming a source of the second doping type at least a portion of which has a lower doping concentration than the drain.

In view of the foregoing, claim 7 and its dependent claims 8 and 9 patentably distinguish over Miller. Accordingly, Applicant respectfully requests that the rejections of these claims under Section 102(b) be withdrawn.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

Richard Pierre FURNEL, Applicant

By:



Daniel P. McLoughlin, Reg. No. 46,066
Wolf, Greenfield & Sacks, P.C.
600 Atlantic Avenue
Boston, Massachusetts 02210-2206
Telephone: (617) 646-8000

Docket No.: S1022.80175US00
Date: January 26, 2004
x01/28/05x